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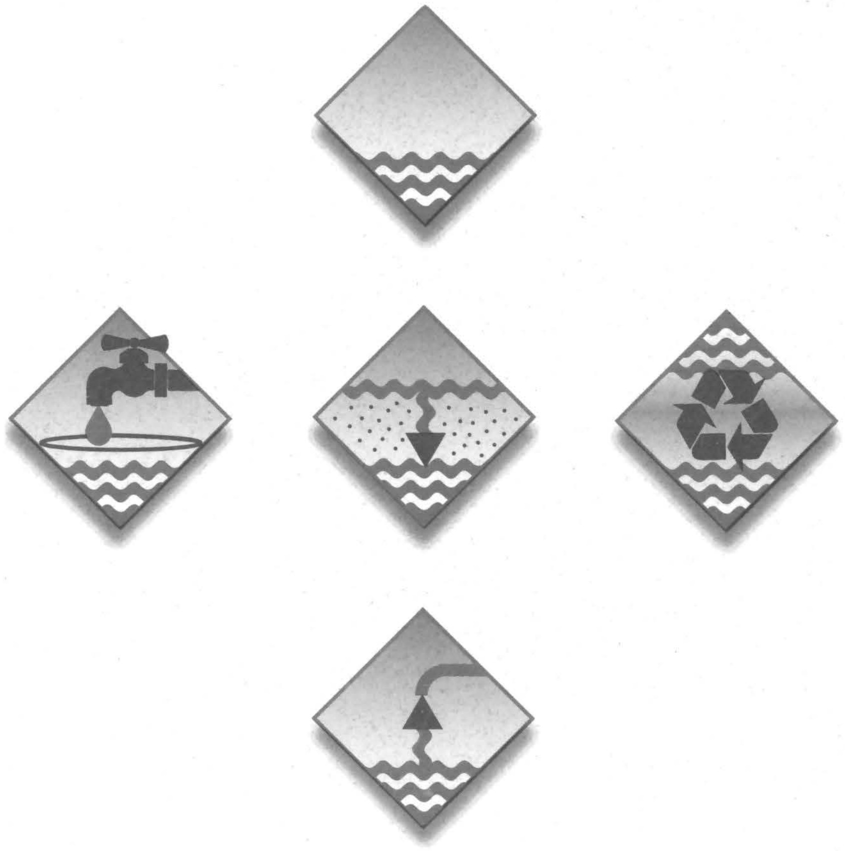
IWRP

Integrated Water Resources Plan

Executive Summary



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Santa Clara Valley Water District

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IWRP

Integrated Water Resources Plan

Executive Summary

of the IWRP Final Report
January 1997

Santa Clara Valley Water District

A Plan for the Future

This executive summary describes the Santa Clara Valley Water District's Integrated Water Resources Plan (IWRP), and the preferred strategy that is its central element. Formulated with extensive community, or "stakeholder" input, the plan sets a course of action to meet Santa Clara County's water supply needs through the year 2020, while balancing a variety of objectives. The preferred strategy was unanimously accepted by the District's Board of Directors in December 1996; implementation of some strategy elements is currently underway.

As the next century approaches, the Santa Clara Valley Water District—and other California water suppliers—are facing the crucial question: Will there be enough water to satisfy future demand?

If Santa Clara County enjoyed only average to wet years from now to the year 2020, current water supplies could probably meet demand—even with projected population growth. However, as the recent 6-year drought showed local communities, dry periods are a fact of life in California. District projections indicate that in future severe droughts the County could experience a water supply shortfall of 100,000 acre-feet—almost a third of current local water use.

Key term: acre-foot
One acre-foot equals approximately 326,000 gallons, the average annual amount of water used by two families of five.

To address this potential water supply gap, and to ensure a reliable supply of high-quality water through the year 2020, the District launched the Integrated Water Resources Plan (IWRP) in March 1996. The IWRP project's preferred strategy for meeting future water supply needs was presented to and accepted by the District's Board of Directors on December 10, 1996.

What Is The IWRP?

Water resource agencies throughout the United States are using integrated water resource planning processes to develop flexible, long-term water supply plans that meet the needs of the agencies and communities they serve. Key elements of IWRP planning are community outreach and involvement and flexibility to respond to changing water supply conditions. District Board members chose the IWRP process as the best way to make short-term decisions and address long-term factors, including uncertainties that could influence Santa Clara County's long-term water supply.

The basic work of the IWRP has been to develop several alternative water resource strategies and rate them against planning objectives *(see "IWRP Elements" on page 4)*, with the goal of selecting a final preferred strategy. From March through November 1996, IWRP project staff met regularly with community "stakeholders" for assistance in this work. Stakeholders included the general public and representatives of business, community, environmental and agricultural groups, as well as District technical staff and officials of local municipalities and other water agencies *(see sidebar on page 2)*.

The IWRP process is shaped by the premise that a wide array or combination of water resource options could meet the District's desired goals, and that any selected strategy must respond to community concerns in order to succeed.

To make sure the District Board of Directors was kept abreast of all project developments, IWRP project staff also made scheduled Board presentations throughout the process. Staff presented the draft IWRP report to Board members and the general public in November 1996. The IWRP Final Report, released in January 1997, will serve as a guidance document for future District water supply planning.

Why Is The IWRP Needed Now?

As the wholesale water supplier for Santa Clara County, the District historically has been responsible for planning the County's long-term water supply. The District's last comprehensive water supply plan was published in 1975. While many of the 1975 plan's recommendations have been adopted and implemented, events have since taken place that underscore the need for an updated, more flexible water supply planning process. Among those events:

■ **A Recent Severe Drought**

During 6 years of sparse local rainfall, from 1987 to 1992, available supplies

In the IWRP process, a stakeholder is any individual who will be affected by or has an interest in the County's long-term water supply. Stakeholders include the general public; community, business and environmental groups; and public officials. Stakeholder involvement is crucial to acceptance of the IWRP plan; therefore, three levels of external stakeholder participation were incorporated into the plan. In addition, internal stakeholders–District staff with technical expertise on water supply issues–periodically reviewed IWRP developments.

Stakeholders

- **Level 1: Core Group**

Made up of 20 representatives from businesses, local cities, other water agencies, agriculture, environmental and community groups, this group was invited by the District to work on the plan throughout the 10-month initial planning phase.

The core group met five times to review IWRP developments, including planning objectives, the screening process, components and resource strategies. Among water supply issues members cited as most important were reliability, quality, cost and efficient use.

In July 1996, Level 1 stakeholders built their own, independent hybrid strategies from those components they felt would be the most successful in meeting potential water supply shortfalls: water conservation (demand management), water transfers, water banking, and non-potable recycling. Staff were able to build on this work in the next level of strategy building, clear in the knowledge that they were using components stakeholders could support. In reviewing staff's work in a September meeting, Level 1 stakeholders again confirmed strategy direction, and helped shape the contingency elements that are linked to the preferred strategy. In November 1996, Level 1 stakeholders endorsed the preferred strategy, predicated upon several concerns that are outlined in Chapters 2, 10 and 11 of the IWRP Final Report. A Level 1 representative also appeared before the Board of Directors on December 10, 1996, to support the preferred strategy.

- **Level 2: Public Forum**

To gain a broader community perspective on IWRP issues, the District held a public forum on August 5, 1996. Participants, who were invited from an extensive list of community, business, environmental, civic and agricultural groups, ranked different water-related issues and evaluated thematic strategies that addressed those issues. Feedback from the Level 2 group was also incorporated into subsequent strategy-building sessions.

- **Level 3: Public Meetings**

To present the IWRP project and engage the public at large in a general discussion of future water supply concerns, the District held three public meetings in June 1996 in the north, central and south parts of the County. Attendees expressed support for the public-oriented IWRP process and identified water recycling, environmental mitigation, local storage and water quality as some key concerns. Participants were offered opportunities to sign up for further participation at the August 5 forum and receive notification of future public meetings on the IWRP process. On November 20 the District held a fourth public meeting, on the Draft IWRP Final Report.

could not meet County water demands. Occasional droughts are to be expected in our semi-arid climate; planning ahead to provide adequate water during such dry periods is essential.

■ Changing State and Federal Environmental Regulations

Most of the District's imported water comes to the County from the Sierra Nevada mountains via the Sacramento/San Joaquin Delta (Delta). This imported water is delivered by the State Water Project (SWP) and the Central Valley Project (CVP), both of which are subject to state and federal environmental regulations that protect water quality and fish and wildlife habitat in the Delta and its upstream watersheds. Deliveries from the Delta are currently restricted under the State Water Resources Control Board's water quality standards and the federal Endangered Species and Central Valley Project Improvement acts. Regulations like these are expected to continue to restrict the District's imported water deliveries in the future.

> ***If Santa Clara County enjoyed only average to wet years from now to the year 2020, current water supplies could probably meet demand. But droughts are a fact of life in California. And in future severe droughts the County could experience a water supply shortfall of up to 100,000 acre-feet, according to District projections.***

Water Supply Sources for Santa Clara County

- **Local.** Rainfall and subsequent runoff constitute our local supply, which is either diverted into the District's 10 reservoirs or percolates into the underground basin for storage there. The average yearly surface flow that can be captured and diverted to reservoirs, treatment plants or the groundwater basin is about 101,000 acre-feet per year; natural recharge into the groundwater basin adds another 112,000 acre-feet. During critical dry periods these amounts average only 59,000 acre-feet and 74,000 acre-feet, respectively.
- **Recycled.** Four water pollution control plants within the County develop recycled water for use in outdoor irrigation. The San Jose/Santa Clara plant will shortly produce 9,000 acre-feet per year; Sunnyvale, 2,400 acre-feet; and Gilroy, 2,600 acre feet; Palo Alto currently produces 400 acre-feet; for a combined total of 14,400 acre-feet per year.
- **Imported.** The District has contracts with both the State Water Project (SWP) and the federal Central Valley Project (CVP) for deliveries of imported water. However, deliveries from both systems are restricted due to flow requirements for the protection of water quality, fish and wildlife under state and federal regulations. The SWP contract is for 100,000 acre-feet per year; average yearly delivery is 74,000 acre-feet. This figure drops to 47,000 acre-feet during critical dry periods.

  Under a federal policy that guarantees a minimum amount of water to municipal and industrial users, the District contracts for 152,500 acre-feet per year from the CVP. Average yearly delivery, however, is 125,000 acre-feet; this figure drops to 110,000 acre-feet during critical dry periods.
- **Hetch-Hetchy.** Several communities within Santa Clara County contract directly with the City and County of San Francisco for imported water from the Hetch-Hetchy project in the Sierra Nevada mountains. The District does not control or administer these deliveries, which average about 64,000 acre-feet per year. However, Hetch-Hetchy water reduces demands on District-supplied water.

Our water supply comes from a variety of sources: local, recycled and imported, including water from the City and County of San Francisco's Hetch-Hetchy system.

■ Projected Growth

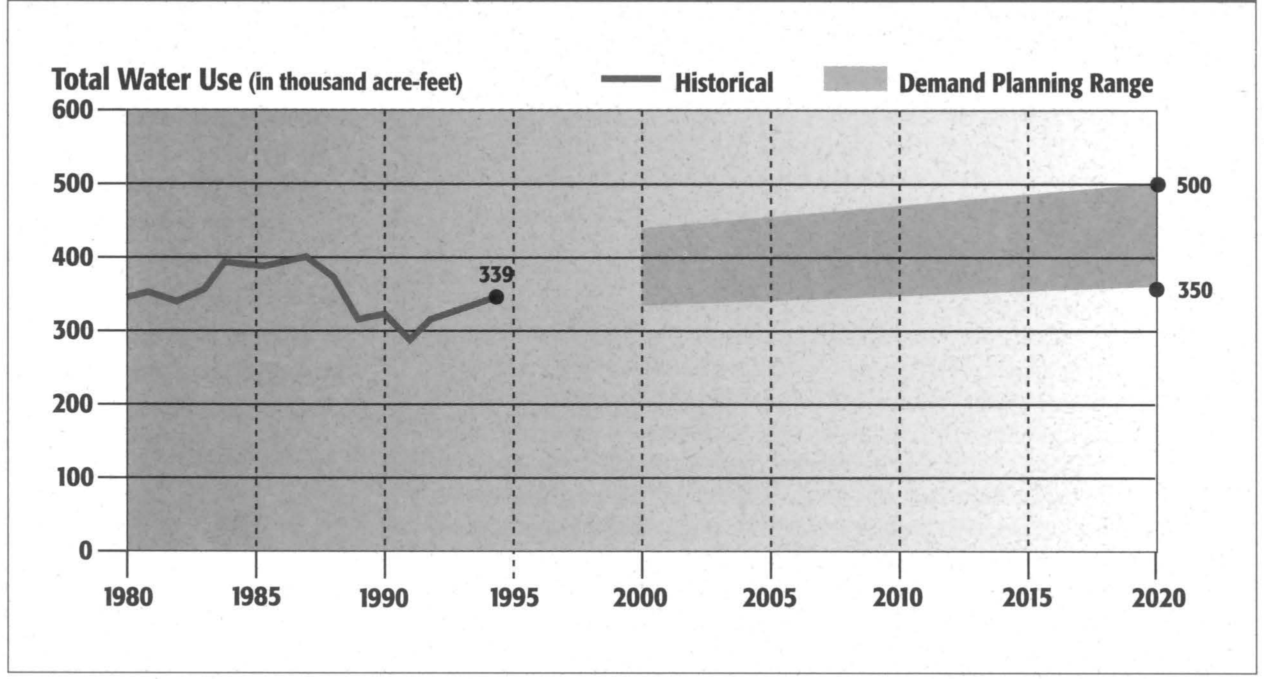
Home to high-tech Silicon Valley, Santa Clara County ranks fourth in the state in terms of population and jobs. Since 1960, the County's population grew from just over 650,000 to more than 1.6 million. According to recent projections from the Association of Bay Area Governments, the County's population could reach almost 1.9 million by 2020; water use is likely to increase accordingly.

Demand for Water

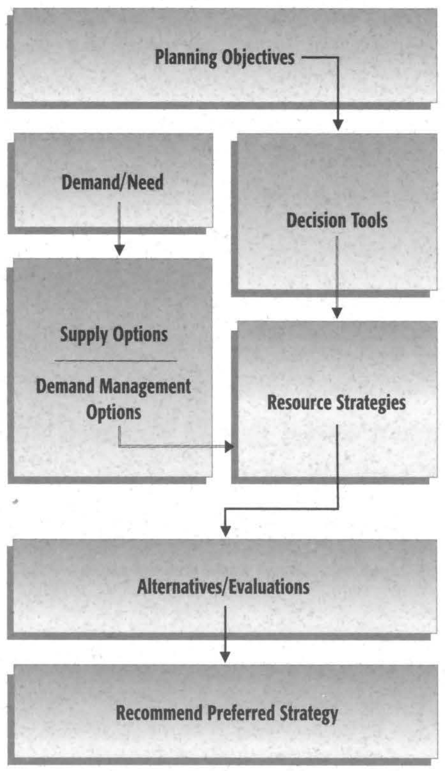
Many factors that affect water demand are difficult to predict. For example, weather patterns fluctuate, development and growth may vary from projections, and conservation programs may save more or less water than expected. To account for such uncertainties, the IWRP used a ***range*** of demand. This range allows the District to develop flexible water resource strategies that can be refined over time in response to actual conditions.

Shown on page *4*, the demand range accounts for demographic changes and water conservation savings expected in the County through 2020. The range for 2020 is between 350,000 acre-feet at the low end and 500,000 acre-feet at the high end. The lower end of the range is based on 1991 water-use data, which reflect drought and recession-related behaviors. The higher end is based on pre-drought, pre-recession water use records. Strategies developed during the IWRP process were designed to meet high-end demand; the preferred strategy is designed to meet a range of demands up to 500,000 acre-feet.

IWRP Demand Range for Planning



IWRP Planning Process



IWRP Elements

■ Planning Process

The chart at left shows the IWRP's planning process. In March 1996, the District's Board of Directors established **objectives** for staff and stakeholders to use as **decision tools** in evaluating water resource options and strategies. Next, staff identified the County's future water **demand/need**, with the year 2020 as a planning horizon. In June 1996, IWRP participants began studying **supply and demand management options** that could be employed to meet the projected 100,000 acre-foot shortfall. Some of these options, including water conservation, water recycling, surface and groundwater storage, and water transfers and banking, later became components of **resource strategies**. Strategy development began in July 1996 with theme-based strategies (for example, water recycling) and moved on to more complex "hybrid" strategies. **Evaluation** of the hybrids led in turn to development and recommendation of the **preferred strategy** that is outlined in this document.

■ Objectives

Thirteen objectives were originally set by the Board for the evaluation of water resource options and strategies. In July 1996 staff developed two additional objectives. The 15 objectives were grouped into five categories: **Operational** (affecting District operations); **Risk** (affecting the District's ability to provide water); **Economic** (affecting District and community costs); **Community** (affecting the public in economic, recreational, water quality, water use and community acceptance areas); and **Environmental** (affecting habitat or ecosystems in the District's service area).

As IWRP participants continued to work toward the preferred strategy, they decided to focus on six objectives that best differentiated between strategies, as highlighted in the chart on page 5: **Maximize Effective Use of Water Supply**; **Maximize Ability to Respond to Changing Conditions**; **Minimize Rate Impacts**; **Include Public Involvement and Maximize Public Acceptance**; **Maximize the Quality and Treatability of Source Water**; and **Avoid or Minimize Adverse Impacts to Habitat or Ecosystems**. The preferred strategy was evaluated against all 15 planning objectives to ensure that it met all criteria.

IWRP Objectives	Categories
1. Provide Equal Reliability of Water Throughout the County	Operational
2. Maximize System Flexibility	
3. Maximize Effective Use of Water Supply	
4. Maximize Multi-Purpose Potential for Integrating District Functions	
5. Meet Level of Service	
6. Minimize Risk of Providing Supplies	Risk
7. Maximize Ability to Respond to Changing Conditions	
8. Minimize Total District Costs	Economic
9. Minimize Rate Impacts	
10. Protect Economic Well-Being of County by Minimizing Costs to the Community	Community
11. Include Public Involvement and Maximize Public Acceptance	
12. Maximize Opportunities for Recreation and Environmental Uses	
13. Maximize the Quality and Treatability of Source Water	
14. Promote Efficient Water Use	
15. Avoid or Minimize Adverse Impacts to Habitat or Ecosystems	Environmental

In evaluating resource strategies, all objectives were given the same weight; for example, maximizing water quality was assumed to be of the same importance as minimizing rate impacts and minimizing impacts to habitat.

■ Supply and Demand Management Options

One of the first tasks of the IWRP project was to identify water supply options that could be used to build strategies to meet the projected shortfall. These options fell into two categories: those that augment supply, such as a new reservoir; and those that reduce demand, such as water conservation (demand management) measures.

Thirteen options were chosen as the "most promising" structural elements for the IWRP's first round of strategy building, discussed below. Another 12 options were held for future consideration, should any of them show additional merit in the future. For a complete discussion of the supply and demand management options, see Chapters 6 and 7 of the IWRP Final Report.

Yield vs. Storage Capacity

Yield refers to the amount of water that a facility (such as a reservoir, groundwater basin or water bank) can supply in a specific time interval, usually a year. Storage capacity refers to the quantity of water that can be stored in a facility—not to the yearly amount the facility can produce. During a multiple-year drought, annual yield can be significantly less than storage capacity, since storage is depleted over several years.

■ Resource Strategies

To fully explore whether any one approach could adequately meet future water supply needs, IWRP participants initially focused on building and screening "thematic" or single-focus strategies. In the second round of strategy building, IWRP participants developed integrated or "hybrid" strategies. These strategies incorporated elements from the thematic group to provide a more balanced solution to future water supply needs.

IWRP Core Elements

Each strategy developed during the IWRP process incorporates identical core elements, which consist of work already planned by the District to address water supply issues. These elements help the District: ensure the validity of baseline assumptions, monitor and evaluate resource options, and meet IWRP objectives. They include:

- Achieve 46,000 acre-feet of yearly water conservation
- Continue to achieve 14,400 acre-feet per year of non-potable (non-drinkable) recycled water
- Establish Municipal & Industrial shortage policy for CVP supplies
- Protect existing resources and monitor potential impacts
- Protect and improve reliability of SWP, CVP and Hetch-Hetchy supplies
- Implement programs to improve source water quality, treatment capabilities
- Improve data collection and evaluation
- Expand and upgrade Rinconada Treatment Plant
- Add recharge and/or treatment capacity for South County
- Investigate future water marketing and storage opportunities
- Investigate increased recycling opportunities and distribution of costs and benefits for recycled water
- Assess system vulnerability
- Continue community interaction and outreach on water supply issues
- Investigate system re-operation to improve efficiency

See Chapter 8 of the IWRP Final Report for the complete list of core elements.

Thematic (Component-Based) Strategies

From the most promising supply and demand management options, District staff selected components for construction of the eight thematic strategies, which are detailed below. Staff also provided initial assessments of each strategy for stakeholder review.

■ **Baseline**
This strategy would implement all core elements, but offers no additional water supply options. Staff assessment: Low cost, moderate environmental impacts, could result in severe shortages in drier years.

■ **Demand Management** (aggressive water conservation program)
In addition to core elements, this strategy assumes additional water savings of approximately 35,000 acre-feet from voluntary and mandatory conservation programs (this figure includes 9,500 acre-feet of savings from graywater systems; the graywater element was eventually dropped due to public health and environmental concerns). Staff assessment: Public acceptance uncertain; could result in severe shortages in dry years.

■ **Water Recycling**
In addition to core elements, this strategy calls for about 37,000 acre-feet of non-potable (non-drinkable) and 60,000 acre-feet of indirect potable (highly treated for drinking) recycled water per year; the indirect potable water would be blended in existing reservoirs and sent through treatment plants for delivery. Staff assessment: Would likely meet water demands in all years; could have high implementation cost. Environmental impacts due to brine disposal from treatment process for indirect potable. Public acceptance uncertain.

■ **Maximize Local Storage**
In addition to core elements, this strategy would include construction of a new South County treatment plant and additional expansion of the Rinconada Water Treatment Plant. It would prioritize use of imported water in average and wet years, and store surface and groundwater for use in drier years. Staff assessment: Could improve South County water quality. Severe shortages could occur in dry years. Moderate cost impact; minimal environmental impact; public acceptance probable.

■ **New Reservoir**
In addition to core elements, this strategy would store imported water in a new, 550,000 acre-foot reservoir (location undetermined). Staff assessment: Moderately high implementation cost; potential difficulty in obtaining construction permits. Significant environmental impact; could result in new recreational opportunities. Public acceptance uncertain.

■ **Water Banking**
In addition to core elements, this strategy would store 550,000 acre-feet of excess District wet-year supplies out-of-County for use in dry years. Staff assessment: Could result in some shortages in early years; low implementation cost; minimal environmental impact; probable public acceptance.

■ **Long-Term Transfers**
In addition to core elements, this strategy would purchase 100,000 acre-feet of imported water from outside the County for use in dry years. Staff assessment: Shortages unlikely; however, locating such a large amount of water in dry years could be difficult. Moderate cost. Minimal environmental impact; possible third-party impact. Public acceptance likely.

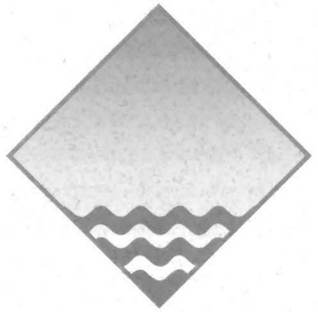
■ **Short-Term Transfers**
In addition to core elements, this strategy would purchase additional imported water on an as-needed basis during dry years. Staff assessment: Could result in some shortages; anticipated mandatory conservation of 15 percent likely. Low cost; minimal environmental impact; public acceptance likely.

Key Components

In the next round of strategy building, the most successful components from the eight thematic strategies were used to develop hybrid strategies. These components became the final structural elements for hybrid and preferred strategy building.

Components are water supply or demand management options that, used together, create water supply strategies to meet the projected future shortfall. The preferred strategy is that water supply strategy which best satisfies the greatest number of planning objectives.

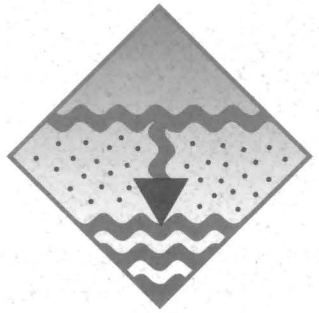
IWRP Key Components



Baseline
No additional water supplies; includes core elements.

New Reservoir
Optimum capacity for a new reservoir (either in-County or out-of-County) would be about 350,000 acre-feet to meet future shortfalls.

Demand Management
Program 1 (core elements plus 11,000 acre-feet): Existing conservation program plus plumbing code changes; low-flow dishwasher retrofit program; would require water-efficient landscapes for new residential construction. **Program 2** (core elements plus 25,200 acre-feet): Includes Program 1 plus point-of-use water heaters, developer demand offsets.



Water Banking
Would store excess District water during average and wet years in an out-of-County groundwater basin for use during dry years. The District is already engaged in such an agreement with Semitropic Water Storage District in Kern County for storage of up to 45,000 acre-feet for withdrawal through 2035.

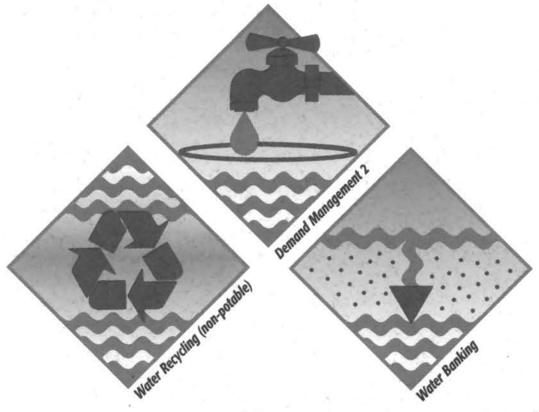
Water Recycling
Non-potable projects either completed or under construction are expected to produce more than 14,400 acre-feet per year. The District estimates that an additional 32,000 acre-feet could be developed to add new supplies. Indirect potable recycling would include advanced treatment and subsequent blending in Anderson Reservoir for groundwater recharge or delivery to a District treatment plant. About 60,000 acre-feet per year could be integrated into the current system.

Long-Term Water Transfers
Would purchase additional water to supplement existing imported water contract supplies. Could involve either the purchase of a contract entitlement or right, which would provide the same amount of water every year, or the purchase of an option to take water only when needed.

Hybrid Strategies

Evaluation of the thematic strategies revealed that no single approach could adequately meet future water demand. In the second round of strategy building, improved or hybrid strategies were created from key components to achieve a more balanced approach to solve potential water supply shortfalls. Using screening data from IWRP participants, District staff created the following four hybrid strategies for stakeholder review.

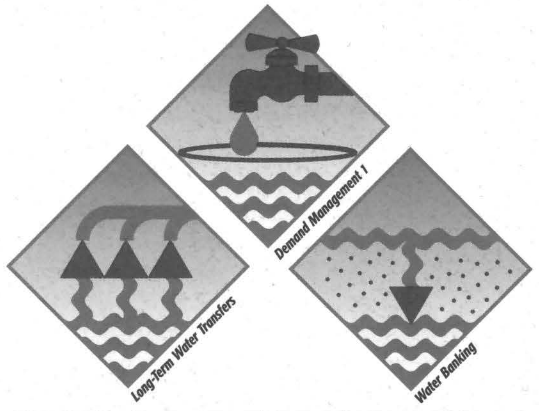
Hybrid Strategy 1: Minimize Environmental Impacts



This strategy relies on components that have the least potential for negative environmental impacts.

- **Demand Management** (25,200 acre-feet). Program 2.
- **Non-Potable Recycling** (32,300 acre-feet). Assumes implementation of non-potable recycled water for urban and agricultural irrigation and industrial reuse.
- **Water Banking** (up to 350,000 acre-feet). Assumes implementation of a program in which excess District water would be stored in an out-of-County groundwater basin during average and wet years, to be transferred back during dry years.

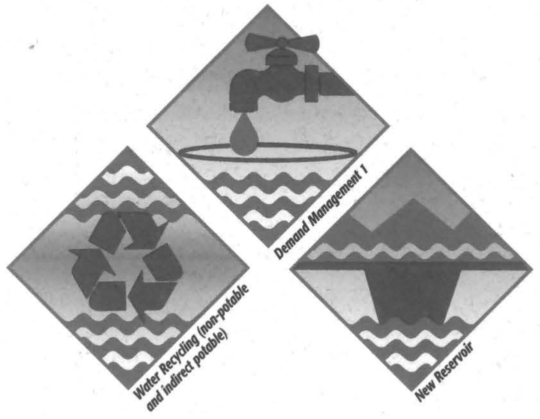
Hybrid Strategy 2: Maximize Flexibility To Meet Changing Demands



This strategy aims to optimize the District's flexibility to meet actual water demands, whether they exceed or fall short of projections.

- **Demand Management** (11,000 acre-feet). Program 1.
- **Long-Term Transfers** (60,000 acre-feet). Assumes District contract with another party to buy additional imported water during dry periods.
- **Water Banking** (up to 350,000 acre-feet).

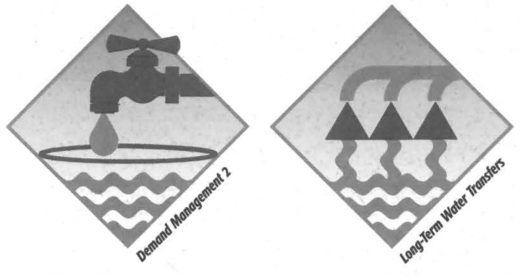
Hybrid Strategy 3: Maximize Local Reliability


Demand Management 1
Water Recycling (non-potable and indirect potable)
New Reservoir

The objective of this strategy is to maximize local water supply reliability by developing more water and storing it either in a local, District-built reservoir or in an out-of-County reservoir with the District as one of several participants.

- **Demand Management** (11,000 acre-feet). Program 1.
- **Non-Potable Recycling** (6,000 acre-feet). Assumes only infill for existing South Bay Recycling and Gilroy/Morgan Hill recycling programs.
- **Indirect Potable Recycling** (35,000 acre-feet). Would blend highly treated recycled water in Anderson Reservoir for subsequent treatment and delivery or groundwater recharge. This would occur only during dry periods.
- **New Reservoir** (up to 350,000 acre-feet). Assumes construction of a new reservoir to store imported water. Could be a joint venture with other agencies out-of-County or a single or joint venture by the District in Santa Clara County.

Hybrid Strategy 4: Minimize Costs



This strategy aims to use components that will result in low costs to the community.

- **Demand Management** (25,200 acre-feet) Program 2.
- **Long-Term Transfers** (75,000 acre-feet).

The Preferred Strategy: Flexibility to Respond to Future Uncertainties

The next step in the IWRP process was to build a new strategy from those elements that ranked best in the hybrids evaluation for meeting a 100,000 acre-foot shortfall by 2020: water banking, non-potable recycling, demand management, and long-term transfers. This ***preferred*** strategy was based on input from Level 1 Stakeholders and staff, who generally ranked hybrid strategy 2 (Maximize Flexibility to Meet Changing Demands) higher than the other three hybrid strategies against the six objectives. To improve hybrid strategy 2 further, staff built in increased use of recycled water and water banking.

The five basic elements of the preferred strategy are:

■ **Core Elements** *(baseline supplies)*

■ **Water Banking** *(up to 350,000 acre-feet)*. Would secure groundwater bank for imported water received by the District in wet and average years. Timeline: Recommend working to secure banking agreements immediately. Cost per acre-foot in 1996 dollars: $322.

■ **Recycled Water** *(at least 6,000 acre-feet, and up to 31,000 acre-feet, contingent upon potential partnerships with wastewater treatment agencies in the County)*. Would expand existing South Bay and Gilroy/Morgan Hill non-potable recycling programs; also calls for pursuing potential cooperative recycling programs with wastewater agencies. Timeline: Recommend planning this project immediately. Cost per acre-foot in 1996 dollars: $1,350.

■ **Demand Management** *(water conservation)*. Program 1 *(11,000 acre-feet)*. Timeline: Recommend beginning implementation in 2002, after regulations governing the District's current conservation program come to an end. Cost per acre-foot in 1996 dollars: $300.

■ **Long-Term Transfers** *(up to 50,000 acre-feet)*. If demands are anticipated to reach the upper end of the demand range, the District could consider additional long-term transfers of up to 25,000 acre-feet per year. Water recycling could also substitute for this amount if cost and operations issues are resolved. Timeline: Recommend having agreement for up to 25,000 acre-feet in place by 2005-2010. Opportunities for transfers that occur earlier than 2005 should be considered as they arise. Cost per acre-foot in 1996 dollars: $116. (This figure does not reflect potential third-party costs that are outside District control).

For a detailed cost analysis of the IWRP preferred strategy components, see Chapter 9 and Appendix H of the IWRP Final Report.

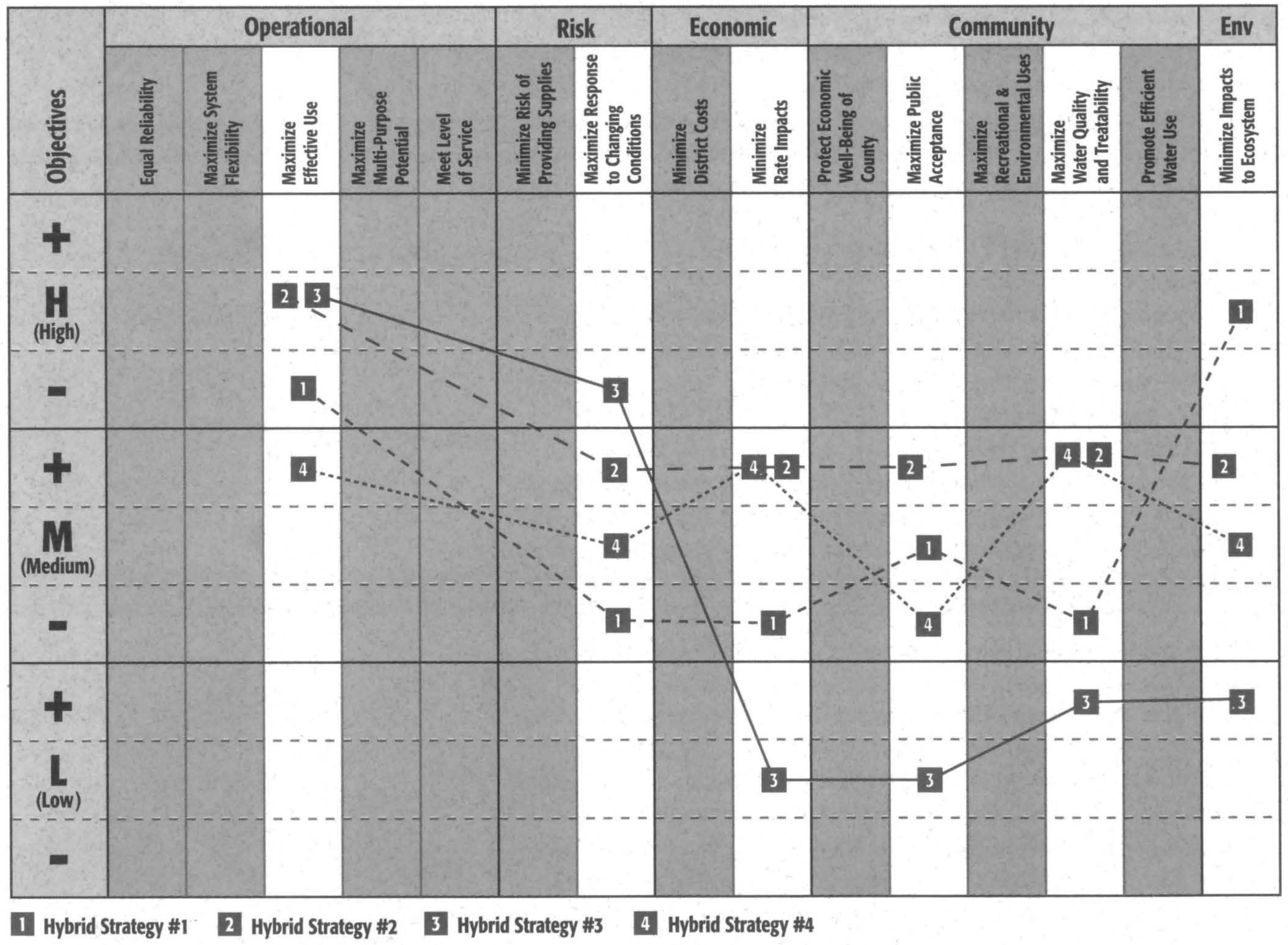
Phasing

Components of the preferred strategy would be phased in gradually, as shown in the chart on page *12*. Generally, phasing would be based on demand, which would be monitored along with supplies every 3 to 5 years in an ongoing IWRP process.

- **Minimum Action**—*no shortage (corresponds to 400,000 acre-foot demand):* Should the core elements alone meet demand, no other elements of the strategy would be implemented, pending further monitoring of demand and supplies.
- **Intermediate Action**—*50,000 acre-foot shortage (corresponds to 450,000 acre-foot demand):* In this scenario, both the banking and water recycling programs would be initiated by 2000, with Demand Management Program 1 following within the next 5 years. Long-term transfers or additional water recycling would begin to be implemented between 2005 and 2010, should demand warrant. Pursuant to Board acceptance in December 1996 of staff recommendations, the District plans to proceed immediately with the Intermediate Action to the year 2000, then update as necessary.
- **Maximum Action**—*100,000 acre-foot shortage (corresponds to 500,000 acre-foot demand):* To meet a major shortage, the long-term transfers would begin to be implemented closer to 2005, with an additional banking program coming on line by 2010. A second transfer program of up to 25,000 acre-feet would be implemented, if needed, by 2015.

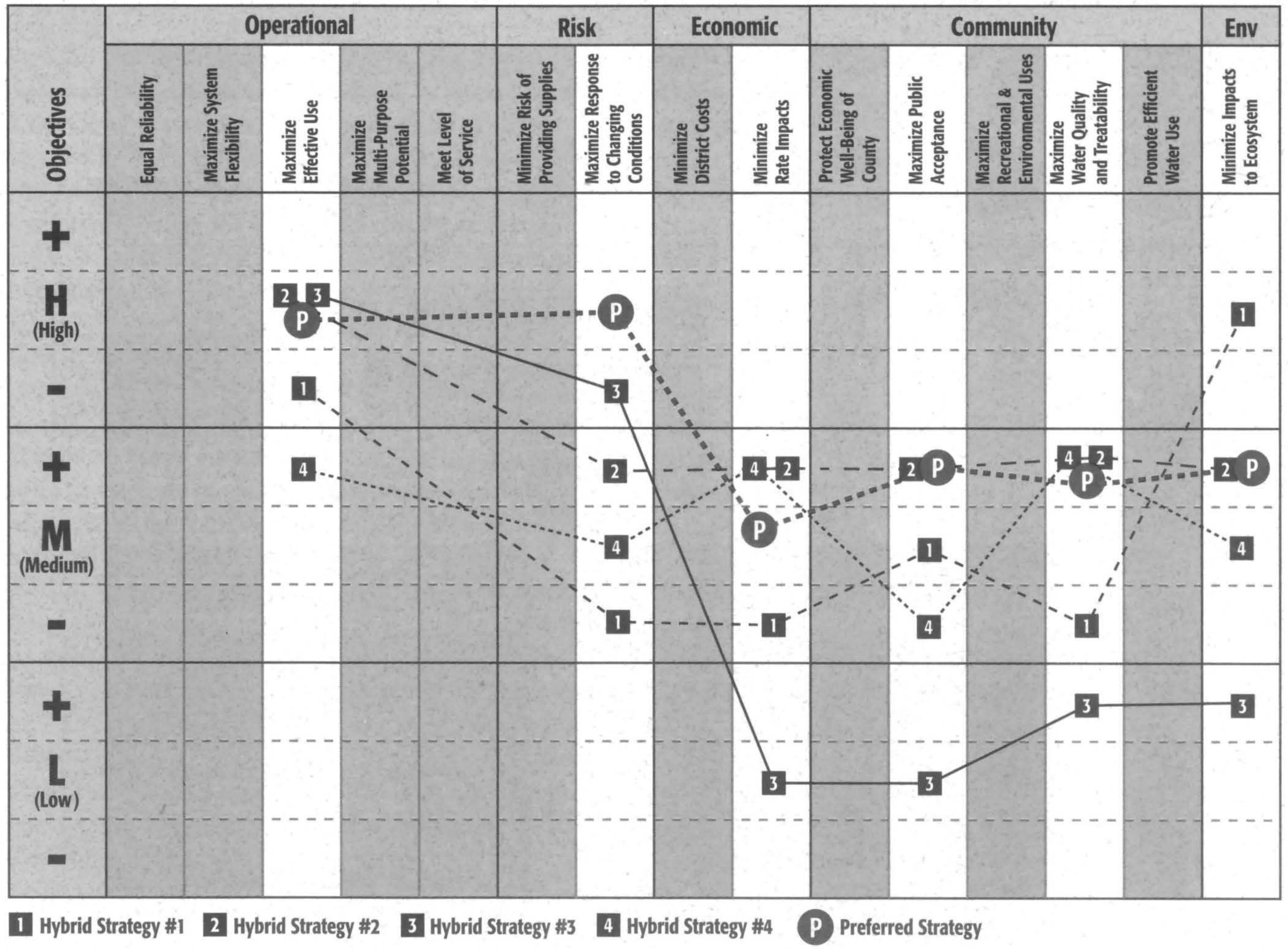
Pursuant to Board acceptance in December 1996 of staff recommendations, the District plans to proceed immediately with the Intermediate Action to the year 2000, then update as necessary.

Evaluation of the Hybrid Strategies

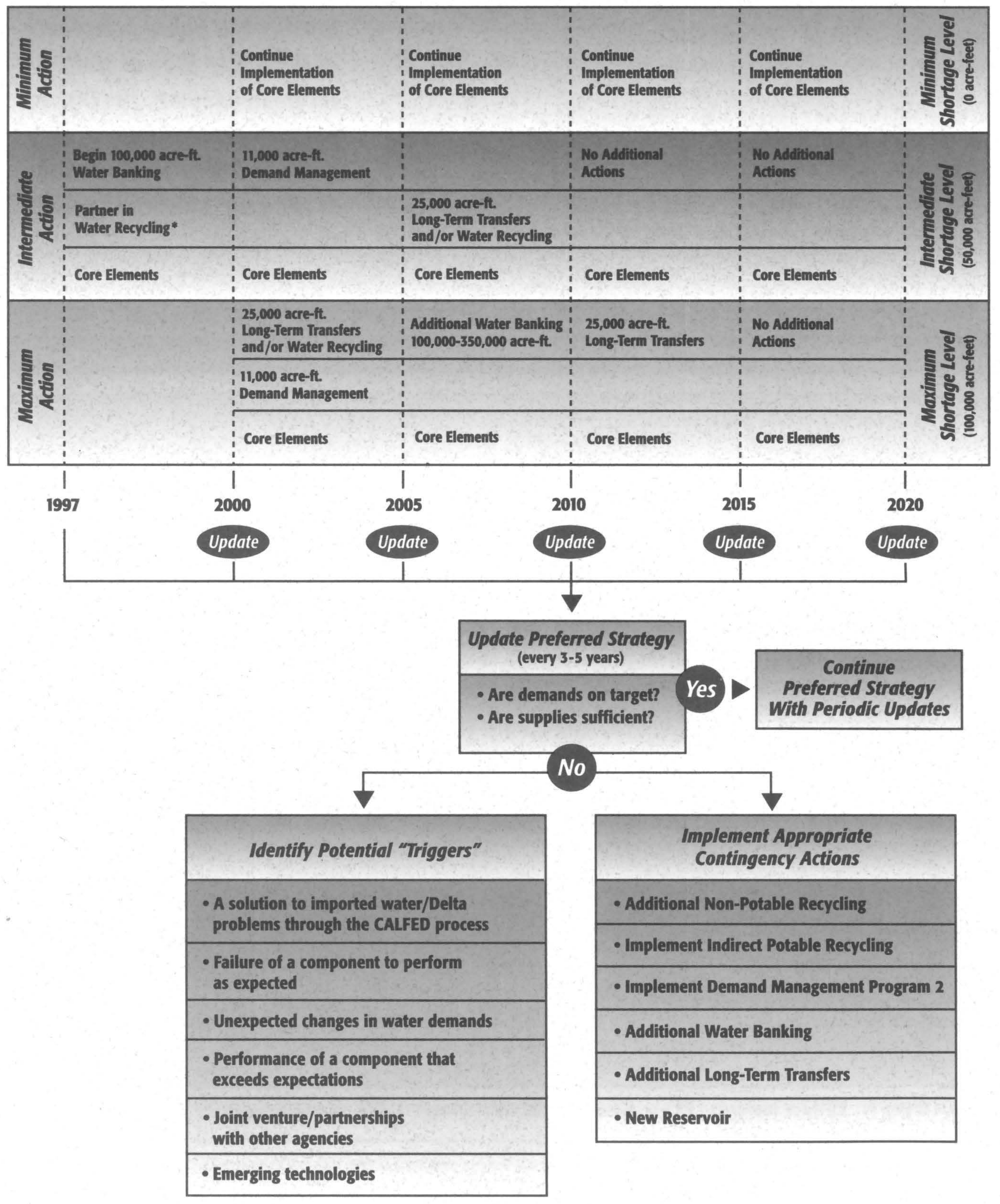


This chart shows how District staff evaluated the four hybrid strategies against the six primary objectives. High-plus represents the best performance against a given objective; low-minus represents the least satisfactory. Stakeholder comments are reflected in the rankings.

Evaluation of the Preferred Strategy



IWRP Preferred Strategy and Contingency Actions


Minimum Action
Intermediate Action
Maximum Action
Minimum Shortage Level (0 acre-feet)
Intermediate Shortage Level (50,000 acre-feet)
Maximum Shortage Level (100,000 acre-feet)
Continue Implementation of Core Elements
Begin 100,000 acre-ft. Water Banking
Partner in Water Recycling*
11,000 acre-ft. Demand Management
25,000 acre-ft. Long-Term Transfers and/or Water Recycling
No Additional Actions
Core Elements
Additional Water Banking 100,000-350,000 acre-ft.
25,000 acre-ft. Long-Term Transfers
1997
2000
2005
2010
2015
2020
Update
Update Preferred Strategy (every 3-5 years)
• Are demands on target?
• Are supplies sufficient?
Yes
No
Continue Preferred Strategy With Periodic Updates
Identify Potential "Triggers"
• A solution to imported water/Delta problems through the CALFED process
• Failure of a component to perform as expected
• Unexpected changes in water demands
• Performance of a component that exceeds expectations
• Joint venture/partnerships with other agencies
• Emerging technologies
Implement Appropriate Contingency Actions
• Additional Non-Potable Recycling
• Implement Indirect Potable Recycling
• Implement Demand Management Program 2
• Additional Water Banking
• Additional Long-Term Transfers
• New Reservoir

*Minimum of 6,000 acre-ft from infill; additional recycling potential to be pursued jointly with wastewater agencies.

Contingency Actions

Recognizing the need to maximize preferred strategy flexibility by keeping additional options open, District staff also developed a contingency plan of action. This plan will be implemented should water demands exceed or fall short of those anticipated by the IWRP.

Contingency actions would be activated by "trigger" events that may have a significant impact either on baseline conditions or on the District's ability to implement the preferred strategy. These events would require either a reevaluation of the IWRP or adjustments to the preferred strategy. Potential triggers include, but are not limited to, the following:

- **A solution to imported water/Delta problems through the joint state/federal CALFED Bay-Delta program**
- **Failure of a component to perform as expected**
- **Unexpected changes in water demands (outside the demand range)**
- **Performance of a component that exceeds expectations**
- **Joint ventures/partnerships with other agencies**
- **Emerging technologies**

Contingency action components identified by staff and stakeholders in the IWRP process are:

- **Demand Management Program 2**. Could be used to supplement the preferred strategy should water demands increase beyond projections or if one or more components fail to perform as expected. Implementation timeline: 5 to 10 years; constant baseline evaluation required.
- **Additional Non-Potable Recycling**. Could be used to supplement the preferred strategy should baseline conditions change, demand management fail to meet expected targets, or if joint ventures were identified. Implementation timeline: 5 to 10 years; constant baseline evaluation, additional dialogue with wastewater agencies required.
- **Indirect Potable Recycling**. Could be used to supplement demand or supply components of the preferred strategy; requires further investigation concerning feasibility. Implementation timeline: 8 to 12 years.
- **Additional Water Banking**. Could be used to supplement the preferred strategy in response to unexpected changes in water demands or institutional changes due to the state/federal CALFED process. Implementation timeline: 5 years.
- **Additional Surface Storage**. Could be used to supplement the preferred strategy in response to unexpected changes in water demands, if another component fails to perform, or if other events arise that would require reevaluation of the IWRP process. Implementation timeline: 15 to 30 years; monitoring of baseline, investigation of feasibility required.
- **Additional Long-Term Transfers**. Could be used to supplement the preferred strategy in response to unexpected changes in water demands or institutional changes due to the state/federal CALFED process. Implementation timeline: 1 to 5 years.

Contingency actions would be activated by "trigger" events that may have a significant impact either on baseline conditions or on the District's ability to implement the preferred strategy.

What's Ahead

With Board acceptance of the IWRP preferred strategy in December 1996, the IWRP began its next phase, a short-term implementation plan. Flexibility remains a key element: The plan includes periodic re-examination of the preferred strategy every 3 to 5 years. This will enable the District to modify the IWRP from time to time to respond to changing climatic, regulatory, economic, demographic or technological developments.

Implementation actions will include:

- Activities to ensure the validity of baseline conditions
- A budget and schedule for implementation of individual preferred strategy components
- Work to ensure the availability of preferred strategy contingency components
- Environmental documentation required to implement the preferred strategy
- Resource option monitoring and evaluation
- Activities to meet IWRP objectives
- Public outreach and participation plan expansion

If it becomes apparent that implementation of any preferred strategy component may result in an impact to the environment, the District will prepare a program-level, project-level, or combination project- and program-level Environmental Impact Report (EIR) as required by the California Environmental Quality Act (CEQA).

As the ongoing IWRP process unfolds in the future, the District will continue to reach out to the community for public input. And stakeholders have indicated a strong desire to continue their participation as the preferred strategy is updated. Public involvement in the IWRP has proven both exciting and invaluable for the District, and has opened the way for further community-oriented planning processes in other District projects. Ultimately, the IWRP process delivered what both the District and the public at large hoped for: a workable, flexible plan to meet potential water supply shortfalls while reflecting community priorities.

> ***Ultimately, the IWRP process delivered what both the District and the public at large hoped for: a workable, flexible plan to meet potential water supply shortfalls while reflecting community priorities.***

For more information regarding the IWRP, or to obtain a copy of the IWRP Final Report, please contact Senior Project Manager Scott Akin at (408) 265-2607, extension 2060, or by mail or e-mail:

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